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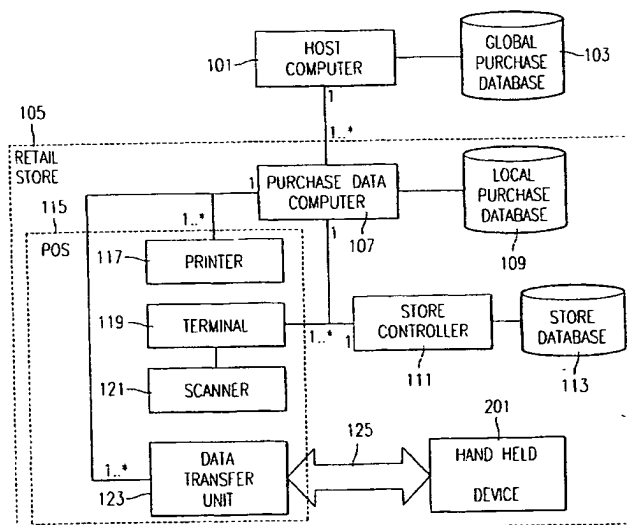
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(54) Title: METHOD AND SYSTEM FOR USING A HAND HELD DEVICE FOR MANAGEMENT OF PROMOTIONS



(57) Abstract: A method, system and computer product for management of promotions using a hand held device. The method includes receiving promotions to a hand held device, storing the promotions to the electronic hand held device, and electronically transmitting the promotions from the hand held device to a point of sale (POS) at the time of a customer transaction. The promotions may be stored to the hand held device from an electronic transmission from a computer associated with the retail store at the time of purchase, or from downloading the promotions from the Internet. Additionally, the promotions may be electronically transmitted from the computer associated with the retail store to the hand held device based on one of a plurality of customer identifiers (CIDs) stored in the hand held device.

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Method and System For Using a Hand Held Device For Management of Promotions

BACKGROUND OF THE INVENTION

Field of the Invention:

The present invention relates generally to a method and system for using electronic hand held devices, and more specifically to a method and system for using an electronic hand held device to manage promotions. As used herein, the term "promotion" refers to any offer, advertisement, incentive, coupon, commercial, or communication for promoting one or more goods and/or services. A promotion may take the form of a coupon or certificate, for example.

Discussion of the Background

As every grocery shopper knows, many manufacturers typically distribute promotions for their products either through the mail, by printing them in newspapers or magazines, by enclosing them in similar or related product packages, or by printing them from a point of sale terminal at a checkout counter in, for example, a grocery store. Moreover, with the proliferation of the Internet, more and more individuals are obtaining such promotions online. In most of these situations, the promotion must be on printed paper which the customer must present to a retailer at the time of purchase in order for the discount to be subtracted from the customer's bill. This procedure often has the disadvantage that the customer loses the promotion and therefore is unable to use or redeem the promotion making the manufacturer's efforts to reward or expose the customer to new products ineffective. This is particularly true in the case of promotions provided at the point of sale, which are often stuffed in a grocery bag never to be referred to again.

The ubiquitous nature of the cellular phone is evidence of consumers' call for the convenience of wireless communications. Moreover, as technological improvements increase the bandwidth of wireless data connections, wireless networks promise to provide the ultimate connection to the Internet by letting users communicate anywhere, anytime. With such convenience, remote hand held data communications devices are likely to become as

common as the cellular telephone and a large portion of Internet connections will take place with such hand held devices.

SUMMARY OF THE INVENTION

Accordingly, one object of this invention is to provide a method and system for managing promotions using a hand held device.

Another object of the present invention is to provide a method and system for managing several customer loyalty accounts, each associated with a different retail store using a hand held device.

Yet another object of the present invention is to provide a method and system for obtaining and redeeming promotions offered on the Internet, using a hand held device.

These and other objects are achieved by providing a novel method, system, and computer program product for managing promotions on a hand held device.

According to one aspect of the invention, a method, hand held device, and computer program product for managing promotions on the hand held device is provided. The method on which the hand held device and computer program product are based includes receiving promotions to the electronic hand held device, storing the promotions in the electronic hand held device, and electronically transmitting the promotions from the hand held device to a point of sale (POS) at the time of a customer transaction in a retail store. The promotions, as well as additional information relating to retail products, may be received via a hard wired or wireless medium from the same or a different POS during a previous customer transaction, or from the Internet, and may be in the form of an advertisement or customer coupon. The hand held device may also be used to manage several customer loyalty accounts by storing a plurality of retail store identifiers and corresponding customer identifiers in the hand held device, and electronically transmitting the plurality of retail store identifiers and associated customer identifiers from the hand held device to a POS having an associated retail store identifier at the time of the customer transaction.

According to another aspect of the invention, a method, system, and computer program product for determining promotions to be delivered to a hand held device is provided. The method on which the system and computer program product are based includes initializing a computer associated with a retail store, determining promotions to be

offered to a customer, electronically transmitting the determined promotions from the computer to a hand held device at the time of a customer transaction. Initialization may be done manually or automatically in response to interfacing the hand held device with the system, and the promotions, as well as additional information relating to retail products, may be transmitted via a hard wired or wireless medium and may be in the form of an advertisement or customer coupon. The promotions may be determined based on a purchase history associated with the customer identifier or determined based on a product identifier. The system may also receive from the hand held device a plurality of retail store identifiers including a retail store identifier associated with the retail store and a particular customer identifier associated with the retail store that the system is located in.

BRIEF DESCRIPTION OF THE DRAWINGS

A more complete appreciation of the invention and many of the attendant advantages thereof will be readily obtained as the same becomes better understood by reference to the following detailed description when considered in connection with the accompanying drawings, wherein:

Figure 1 is a computerized system for delivering promotions to a hand held device in accordance with an embodiment of the present invention;

Figure 2 is a block diagram of a hand held device used in accordance with an embodiment of the present invention;

Figure 3A is a retail store table for associating customer identifiers (CIDs) of a particular customer with a retail store in accordance with an embodiment of the present invention;

Figure 3B is a predetermined promotion table for associating a predetermined promotion with a CID in accordance with an embodiment of the present invention;

Figure 3C is a purchase trigger table for associating purchase triggers with targeted promotions in accordance with an embodiment of the present invention;

Figures 4A through 4C are exemplary promotions that may be displayed on the hand held device in accordance with an embodiment of the present invention;

Figure 5 is a flow chart describing the process for managing promotions using a hand held device in accordance with an embodiment of the present invention;

Figure 6 is a flow chart describing the process for providing promotions from a POS to the hand held device in accordance with an embodiment of the present invention;

Figure 7A is a schematic illustration of a system for downloading promotions from the Internet, in accordance with an embodiment of the present invention; and

Figures 7B and 7C are flow charts describing alternative processes for providing promotions from the Internet to the hand held device in accordance with alternative embodiments of the present invention;

Figure 8 is a schematic illustration of a computer system programmed to perform one or more of the special purpose functions of the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring now to the drawings, wherein like reference numerals designate identical or corresponding parts throughout the several views, and more particularly to Figure 1 thereof, there is shown a computerized system for delivering promotions to a hand held device according to an embodiment of the present invention. The system of Figure 1 includes a host computer 101, a global purchase database 103, one or more retail stores 105, a purchase data computer 107, a local purchase database 109, a store controller 111, a store database 113, and one or more points of sale 115, each including a printer 117, a terminal 119, a scanner 121, and a data transfer unit 123.

The host computer 101 is any suitable workstation, server, or other device for communicating with the purchase data computer 107 and for storing information in and retrieving information from the global purchase database 103. The host computer 101 also determines promotions to be sent to customers in the retail store 105 in accordance with one embodiment of the invention. The host computer 101 communicates with the purchase data computer 107 using any suitable protocol and may be implemented using the computer system 801 of Figure 8, for example.

The global purchase database 103 is a file that includes records containing information for providing promotions in accordance with the present invention. This information includes information of each purchase made by a customer in the retail store 105. Such information may include, but is not limited to the shelf keeping unit (SKU), brand, size, weight, price, date and time of purchase, and customer identifier (CID) of the customer

making the purchase, for example. In one embodiment, portions of this information are obtained from bar codes on purchase items, which are scanned by the scanner 121 during a transaction. These bar codes may contain UPC, JAN, and EAN information. Records in the global purchase database 103 contain fields together with a set of operations for searching, sorting, recombining, and other database functions. The global purchase database 103 may be implemented as two or more databases, if desired. One or more of U.S. Pat. Nos. 5,832,457; 5,649,114; 5,430,644; and 5,592,560 describe techniques for collecting customer purchase history information and for storing such information in databases such as the global purchase database 103 and the store database 113, for example. U.S. Pat. Nos. 5,832,457; 5,649,144; 5,430,644; and 5,592,560 are incorporated herein by reference. Additionally, techniques for collecting customer purchase information and for storing such information in databases, such as the global purchase database 103 and the store database 113, are described in other patents owned by Catalina Marketing and/or Catalina Marketing International. Each patent owned by Catalina Marketing and/or Catalina Marketing International is incorporated herein by reference.

The retail store 105 is generically referred to as a retail location and is a place where goods are kept for retail sale to customers. As noted above, many retail stores 105 may be connected to the host computer 101.

The purchase data computer 107 may be implemented using the computer system 801 of Figure 8, for example, or any other suitable PC, work station, server, or device for communicating with the host computer 101, for storing and retrieving information in the local purchase database 109, for monitoring data transmitted between the terminal 119 and the store controller 111 (i.e., transaction data) and for controlling the printer 117 and data transfer unit 123. According to one embodiment, the purchase data computer 107 determines and delivers promotions.

The local purchase database 109 is a file that includes records containing information for providing promotions in accordance with the present invention. The records in the local purchase database 109 contain fields for associating bar codes with products in the retail store 105 (e.g., by using UPC, JAN, and/or EAN codes) and associating customer identifiers with promotions. The local purchase database 109 also includes operations for searching, sorting, recombining, and other database functions. The local purchase database 109 may be

implemented as two or more databases, if desired. Periodically, (e.g., daily) sales transaction information stored in the local purchase database 109 is retrieved by the purchase data computer 107 and sent to the host computer 101, which uses the information to update the purchase history information stored in the global purchase database 103.

The store controller 111 is any computer or device for communicating with the terminal 119 and for using information stored in the store database 113 to carry out transactions at the point of sale (POS) 115. A description of a store controller 111 is found in U.S. Patent No. 5,173,851, which is incorporated herein by reference.

The store database 113 is a file that includes records containing information for carrying out transactions at the point of sale 115 by scanning bar codes printed on purchased items. The records in the store database 113 contain fields for associating bar codes with products and their corresponding prices. The store database 113 also includes operations for searching, sorting, recombining, and other database functions, and may be implemented as two or more databases, if desired.

The retail store 105 includes one or more points of sale 115. Each point of sale 115 preferably includes a corresponding printer 117, a terminal 119, a scanner 121, and a data transfer unit 123. The data transfer unit 123 is coupled to the purchase data computer 107 and provides a two-way data communication coupling 125 with hand held device 201. According to an embodiment of the present invention, data transfer unit 123 is used to exchange data relating to promotions with hand held device 201. Promotions are uploaded or downloaded by the data transfer unit 123 in response to receiving commands from the purchase data computer 107 and/or hand held device 201, for example. Data transfer unit 123 may be implemented as a data port for transmitting and receiving data via a hard wired medium. As another example, data transfer unit 123 may be a wireless transceiver such as an infrared transmitter and detector, or a device for implementing Bluetooth radio link technology. Bluetooth is a technology specification for small form factor, low cost, short range radio links between mobile PCs, mobile phones, and other portable devices. Alternatively, the data transfer unit 123 may be implemented as any combination of suitable devices for providing two-way data communication coupling 125 so as to provide compatibility with a variety of hand held devices. According to one embodiment, data transfer unit 123 sends and receives electrical, electromagnetic or optical signals that carry

digital data streams representing various types of information related to promotions. Additionally, a hard copy of the promotions transferred to the data transfer unit 123 may be printed on the printer 117 in response to receiving commands from the purchase data computer 107, if desired.

The terminal 119 may be implemented as a standard cash register and may include a screen, credit card reader, and numeric key pad, for example. The terminal 119 communicates with the store controller 111 and the scanner 121. The scanner 121 may be implemented as any conventional scanning device for reading product information such as an item code (e.g., UDC, EAN, or JAN) from bar codes or other indicia on the product. This information read by the scanner 121 is transmitted to the store controller 111 via the terminal 119. The store controller 111, uses the scanned information and the information stored in the store database 113 to determine information of the transaction including product price, quantity, and product description, for example.

If there are multiple points of sale 115 within the retail store 105, then each terminal 119 is preferably arranged on a loop with the store controller 111. The purchase data computer 107 is located in front of the store controller 111 on the loop so that information transmitted from the terminals to the store controller is monitored by the purchase data computer 107.

It is to be understood that the system in Figure 1 is for exemplary purposes only, as many variations of the specific hardware and software used to implement the present invention will be readily apparent to one having ordinary skill in the art. For example, the functionality of the purchase data computer 107 and the store controller 111 may be combined in a single device. This and other implementations of retail computer systems are described in greater detail in one or more of U.S. Pat. Nos. 4,723,212; 4,910,672; 5,173,851; 5,612,868; and 6,026,370, each of which is incorporated herein by reference. To implement these variations as well as other variations, a single computer (e.g., the computer system 801 of Figure 7) may be programmed to perform the special purpose functions of two or more of any of the devices numbered 101 through 123 shown in Figure 1. On the other hand, two or more programmed computers may be substituted for any one of the devices numbered 101 through 123 shown in Figure 1. Principles and advantages of distributed processing, such as redundancy and replication, may also be implemented as desired to increase the robustness

and performance of the system, for example.

Figure 2 is a block diagram of an exemplary hand held device used according to the present invention. Figure 2 is intended to represent any one of a variety of small screen computers such as the hand held computer sold under the Trademark PalmPilot by Corporation of Santa Clara, California, the Trademark Palm by Palm, Inc. of Santa Clara, California, or the hand held computer disclosed in any one of U.S. Patent Numbers, 4,545,023, 5,133,076, and 5,900,875, for example. U.S. Patent Numbers, 4,545,023, 5,133,076, and 5,900,875 are incorporated herein by reference. Additionally, the hand held device 201 may be a personal data assistant (PDA), cellular phone, or any other portable hand held device capable of uploading, downloading, storing, and manipulating digital information.

Preferably, hand held device 201 includes a bus 203 or other communication mechanism for communicating information, and a processor 205 coupled with bus 203 for processing the information. Hand held device 201 also includes a memory unit 207, such as a random access memory (RAM) or other dynamic storage device (e.g., dynamic RAM (DRAM), static RAM (SRAM), synchronous DRAM (SDRAM), flash RAM), coupled to bus 203 for storing information and instructions to be executed by processor 205. In addition, memory unit 207 may be used for storing temporary variables or other intermediate information during execution of instructions to be executed by processor 205. Memory unit 207 may further include a read only memory (ROM) or other static storage device (e.g., programmable ROM (PROM), erasable PROM (EPROM), and electrically erasable PROM (EEPROM)) for storing static information and instructions for processor 205. The ROM may be depicted as a separate memory unit. A storage device 211, such as a magnetic disk, may be provided coupled to bus 203 for storing information and instructions.

Hand held device 201 also includes a display unit 213, such as a liquid crystal display (LCD), coupled to bus 203 for displaying information to a user of hand held device 201. The hand held device 201 includes an input device 215, such as an alpha numeric keypad and/or cursor control, for communicating information and command selections to processor 205.

The hand held device 201 also includes an interface 217 coupled to bus 203. Interface 217 provides a two-way data communication coupling 125 to data transfer unit 123 of the POS 115 or a computer system such as 801 illustrated in Figure 8. Interface 217 may be a

data port for transmitting and receiving data via a wire medium. As another example, interface 217 may be a wireless transceiver such as an infrared transmitter and detector or a device for implementing Bluetooth short range radio link technology. Alternatively, the interface may be implemented as any combination of devices for providing two-way data communication coupling 125 so as to provide compatibility with a variety of POS devices. In any such implementation, interface 217 sends and receives electrical, electromagnetic or optical signals that carry digital data streams representing various types of information.

The present invention stores information relating to customer identifications, retail stores 105, the purchase histories of customers, and purchase triggers, for example. This information is stored in one or more memories such as a hard disk, optical disk, magneto-optical disk, and/or RAM, for example. One or more databases, such as the global purchase database 103 and the store database 113, may store the information used to implement the present invention. The databases are organized using data structures (e.g., records, tables, arrays, fields, graphs, trees, and/or lists) contained in one or more memories, such as the memories listed above or any of the storage devices listed below in the discussion of Figure 8, for example.

Figures 3A, 3B, and 3C, depict data structures used for implementing a system for managing promotions in accordance with an embodiment of the present invention. The data structures are depicted in a relational format, using tables, whereby information stored in one column (i.e., field) of a table is mapped or linked to information stored in the same row (i.e., record) across the other column(s) of the table. These data structures are used by the host computer 101 and/or the purchase data computer 107 and/or the hand held device 201 to manage promotions in accordance with the present invention. According to one embodiment, the data structure shown in Figure 3A is stored in the hand held device 201 so that a customer can manage many customer loyalty accounts, while the data structures shown in Figures 3B and 3C are stored in the global purchase database 103, the local purchase database 109, and/or any other suitable storage device(s) or medium(s).

Figure 3A is a retail store table 301 that includes a field 303 for storing customer identifiers (CIDs) and a field 305 for storing a particular retail store associated with the CID in the field 303. A CID is any identifier that is scanned, read, or otherwise entered into a computer system at checkout to identify a customer. Each customer may have multiple CIDs

and each retail store may use any one of the CIDs to track purchases of, and provide incentives to, the customer. Thus, different retail stores may have a different CID for a particular customer. Examples of possible CIDs are credit card numbers, debit card numbers, social security card numbers, driver's license numbers, checking account numbers, street addresses, names, e-mail addresses, telephone numbers, frequent customer card numbers, shopper card identifications (SCIDs), or shopper loyalty card numbers issued by the retail store 105, although any other suitable form of identification may be used.

To illustrate the use of retail store table 301, Figure 3A includes three exemplary entries for a hypothetical customer having 3 customer loyalty accounts stored in hand held device 201. The first entry of Figure 3A shows that field 303 may contain the number "12345" as a CID associated with the hypothetical customer, and in the same record, field 305 may contain the entry "ABC grocery" as a corresponding retail store. The retail store table 301 also includes the CID "8765" of the customer in field 303 and the corresponding entry (i.e. the entry in the same record) "XYZ market" in field 305 as shown by the second entry of Figure 3A. Alternatively, instead of the store name, the field 305 stores codes or identifying data of retail stores as shown in the third entry of Figure 3A. Thus, the retail store table 301 associates each of a number of CIDs assigned to the hypothetical customer with a corresponding retail store 105 thereby allowing the customer to consolidate and easily manage many different loyalty cards when stored in hand held device 201.

Figure 3B is a predetermined promotion table 307 that includes a field 309 for storing CIDs and a field 311 for storing predetermined promotions associated with the CID. Unlike retail store table 301, the predetermined promotion table 307 stores CIDs of many different customers and promotions associated with each CID. Thus, as seen in the exemplary entries of Figure 3B, the first entry in table 307 associates predetermined promotions with the hypothetical customer referred to in Figure 3A, while the second entry of table 307 associates predetermined promotions with a different customer having CID MMM765. The predetermined promotions in field 311 may be determined based on purchase history of the customer obtained by analysis of, for example, purchase data such as the location of the purchase, a description of the items purchased, the price of each item purchased, date and time of the transaction, and any other desired information of customers' transactions.

Figure 3C is a purchase trigger table 313 including a field 315 for storing purchase

triggers and a field 317 for storing promotions. The purchase triggers in field 315 may be bar codes or other information which, when sent from the terminal 119 to the store controller 111, are monitored by the purchase data computer 107 and cause the purchase data computer 107 to deliver the corresponding promotion(s) in the field 317 to the hand held device 201 via the data transfer unit 123. Thus, the purchase trigger table 313 associates purchase triggers with promotions to be delivered to a customer whose transaction meets one or more of the purchase triggers in the field 315.

In a preferred embodiment, the retail products relating to the promotions stored in field 317 are complements of, in competition with, or in some way related to the purchase trigger items stored in field 315. The first entry of Figure 3C illustrates an example of a promotion for a product in competition with a trigger product. In this example, "brand A cola" in field 315 is a purchase item that provides a trigger for a promotion of "50 cents off brand B cola" in field 317, brand B cola being in competition with brand A cola. Similarly, trigger item "brand T tea" in field 315 triggers a promotion for a "50 cents off 5 lb bag of sugar" in field 317, sugar being ordinarily used with tea and therefore a complement item of tea. Thus, if a customer's purchases include both brand A cola and brand T tea, these items will be scanned at the POS 115 and promotions for 50 cents off brand B cola and 50 cents off a 5 lb bag of sugar will be offered at the POS 115 to the customer. How the promotions in field 317 are provided in response to a trigger item in field 315 will be further described below.

As shown by the phantom fields in Figures 3B and 3C, the predetermined promotion field 311 and/or the promotion field 317 may contain a subfield, 323 and 325 respectively, for providing a customer condition associated with the promotions. While all promotions require a basic condition such as making any purchase, or purchasing a particular brand of product, subfields 323 and 325 are provided to store additional conditions and/or actions that are required in order to receive the reward of the promotion. In a preferred embodiment, the conditions stored in fields 323 and/or 325 are loyalty conditions that require the customer to exhibit increased loyalty to the store 105, a chain of stores including the store 105, and/or a particular brand or product. Loyalty conditions may include time conditions identifying a period of time (e.g., within one week) in which other conditions must be satisfied, purchase conditions such as purchase amount conditions identifying an amount of money that must be

spent within the time indicated by the time condition, location conditions identifying one or more locations at which the purchase conditions may be satisfied, and brand conditions identifying a brand or product that must be purchased in order to receive the reward. For example, the first entry of Figure 3B illustrates that the customer receives a gallon of milk for 5 cents only if the customer spends \$25 in the store associated with CID 8765 within one week. Thus, aside from the basic condition of buying a gallon of milk, the customer must spend \$25 in the store associated with CID 8765 within one week in order to receive the reward. As seen in Figure 3A, CID 8765 is associated with "XYZ market" and therefore the first entry of table 307 is designed to promote loyalty to XYZ market.

Figures 4A, 4B and 4C are examples of promotions that may be offered to customers. As shown in these figures, each promotion includes a reward to be received by the customer, and may or may not include a loyalty condition to be satisfied by the customer in order to receive the reward. As discussed above, the loyalty condition indicates what a person must do to receive the reward. The reward may be a check, coupon, discount, certificate, redeemable medium, and/or other positive benefit to a person who meets the condition. For example, promotion 401 of Figure 4A includes reward 403 (50¢ off brand B cola) which has no loyalty condition associated with it. A customer that makes a purchase of brand B cola at a retail store 105 that accepts the promotion will receive a 50¢ discount without any further action. Similarly, Figure 4B shows reward 407 of 50 cents off brand X cereal. As seen in Figure 4C however, promotion 413 includes condition 417 that requires the customer to spend \$25 in retail store 105 within 7 days to receive the reward 415 of one gallon of milk for 5 cents.

The promotions 401 and 405 are preferably remarkable offers designed cause a customer to switch to a particular brand of product or to promote brand loyalty for a product. In the case of causing a customer to switch brands, the promotion is preferably triggered by the purchase of a competitor brand as discussed with respect to Figure 3C above. Promotion 413 is a remarkable offer designed to keep customers coming back to the store 105. According to an embodiment of the invention, the rewards relating to store loyalty are for staple items such as milk, eggs, bread, etc. to encourage customers to do all of their grocery shopping at the store 105 rather than shop for specific items only. However, it is to be understood that each promotion may be tailored to suit different purposes, as desired. The rewards and the conditions may involve subject matter other than groceries and retail stores.

Moreover, the promotions may include other information not shown in Figures 4A, 4B, and 4C and the other information may include information related or unrelated to the customer's purchases or promotions offered to the customer. Finally, it is to be understood that while the promotion disclosed in Figures 3A-3C and 4A-4C indicate redeemable coupons, the hand held device 201 may be used to manage other promotions such as any offer, advertisement, incentive, commercial, or communication for promoting one or more goods and/or services. For example, the promotion may be an advertisement which can be displayed on the display 213 of hand held device 201. The advertisement may be text and/or video.

Figure 5 is a flowchart explaining the process of managing promotions with a hand held device in accordance with the present invention. The description of this figure is made by referring only to the purchase data computer 107 with the understanding that the host computer 101 may be used in combination with or as a substitute for the purchase data computer 107. In step 501, the customer stores promotions received by the hand held device 201. Promotions are stored in memory unit 207 and/or storage device 211 via the interface 217 and bus 203 of the hand held device 201. Storage step 501 may be performed in response to receiving promotions from POS 115 or from the Internet 706, for example, as will be discussed.

After the promotions are stored within the hand held device, in step 503 the customer may view the promotions on the display 213 of hand held device 201. The promotions may be viewed on display 213 individually as seen in Figures 4A, 4B, and 4C, for example, or viewed in tabular format allowing a user of the hand held device 201 to view several promotions at one time. Input device 215 allows a user of the hand held device to communicate command selections to the processor 205 via the bus 203, for selecting, deleting, grouping and otherwise organizing the promotions stored in memory of hand held device 201. For example, a customer using hand held device 201 may view all promotions, group the promotions to be retained, and delete the remaining promotions. With the retained promotions stored in hand held device 201, the customer shops at a retail store for the retail items associated with the promotions retained in step 503. This allows the consumer to easily group promotions that may be redeemed at a retail store.

During the customer's purchase transaction, scanner 211 of POS 115 scans in the customer's purchase items including those items associated with the promotions as shown in

step 505. The customer preferably uploads a unique CID associated with the customer from hand held device 201 to POS 115 as in step 507 during the purchase transaction. In one embodiment, when the customer interfaces the hand held device 201 with the POS 115, the retail store table 301 is transferred from the memory unit 207 through bus 203 and interface 217 of the hand held device 201. The data transfer unit 123 of POS 115 receives and transfers the retail store table 301 to the purchase data computer 107 which obtains a store identifier unique to the retail store 105 or retail chain that retail store 105 is affiliated with, from the local purchase database 109 or the store database 113. Purchase data computer 107 searches field 305 of retail store table 301, for a store identifier that matches the identifier obtained from database 109 or 113, and the corresponding CID in field 303 of table 301 is determined to be the CID of the customer for the particular retail store 105. For example, a customer shopping at ABC Grocery store and having table 301 of Figure 3A stored in hand held device 201 would interface hand held device 201 with a POS 115 located in ABC Grocery store in order to transmit table 301 to the purchase data computer 107 located in ABC Grocery store. The purchase data computer 107 then obtains the identifier "ABC Grocery" from the local purchase database 109, for example, and matches this identifier with field 305 to determine the CID of the customer for ABC Grocery store. With the CID determined, the purchase data computer 107 and host computer 101 can monitor the purchases and provide incentives to the customer as mentioned above with respect to Figure 1.

Promotions are similarly transmitted from hand held device 201 to POS 115 in step 507. The promotions are sent from the data transfer unit 123 to the purchase data computer 107. The purchase data computer 107 monitors the items scanned by the scanner 121 and transferred to the store controller 111 via the terminal 119. In step 508, the purchase data computer 107 matches the scanned items with the promotions uploaded from the hand held device 201 to the POS 115 in step 507. In this way, the purchase data computer applies the promotions to the corresponding items purchased by the customer and automatically credits the customer's bill in step 509.

Figure 6 shows the process for inputting promotions into the hand held device 201 from a POS 115 according to one embodiment of the present invention. The description of this figure is made by referring only to the purchase data computer 107 with the

understanding that the host computer 101 may be used in combination with or as a substitute for the purchase data computer 107. In this embodiment, the customer makes purchases at retail store 105 and at the time of the customer's purchase transaction, the purchase data computer 107 is initialized as seen in step 601. Initialization of the purchase data computer 107 can occur automatically in response to the customer initiating a signal connection between the hand held device 201 and the data transfer unit 123 by physical connection through a hard wired medium or by connection through a wireless medium. Alternatively, the initialization of the purchase data computer may occur in response to a manual input from the operator of the POS 115. In either instance, initialization step 601 notifies the purchase data computer 107 that a hand held device 201 is interfaced with the purchase data computer 107 via the data transfer unit 123 of the POS 115.

After initialization, in step 603 the purchase data computer 107 determines the promotions to be delivered to the hand held device 201 interfaced at the POS 115. Promotions can be predetermined based on, for example, purchase data history of the customer, or determined based on trigger items as will be discussed.

After determining promotions in step 603, the purchase data computer 107 electronically transmits the promotions to the hand held device 201 via the data transfer unit 123. This electronic transmission may be made through either a hardwired medium or a wireless medium. The transmitted promotions are then received by the hand held device 201 which stores the promotions to begin the process of managing promotions depicted in Figure 5. Preferably, promotions transmitted from POS 115 are downloaded simultaneously with the uploading of promotions in step 507 of Figure 5. Therefore, in a preferred embodiment, a customer uses hand held device 201 at the time of purchase to redeem previously stored promotions and store new promotions that can be redeemed in subsequent transactions. Alternatively, the customer can redeem promotions according to the process depicted in Figure 5 without receiving new promotions from the POS 115. Moreover, it is to be understood that promotions may be received from the same or different POS that the customer uses to redeem promotions.

According an embodiment, Figure 6's step 603 of determining promotions to be delivered to the customer's hand held device 201 is accomplished according to predetermined promotions obtained based on the customer's purchase history. In this embodiment, and

referring to Figure 1, the host computer 101 polls the purchase data computer 107 in each of the retail stores 105 for purchase history information to update the purchase history information stored in the global purchase database 103. The host computer 101 generates behavioral information from the purchase history information stored in the global purchase database 103. This behavioral information may be any information that a market researcher (i.e., surveyor) wishes to use to determine whether a targeted promotion should be delivered to a customer. Examples of behavioral information are whether a customer has purchased at least five pounds of dog food per month for the last year, whether the customer has purchased cold medicine in the last week, and whether the customer consistently purchases lactose-free milk.

The host computer 101 compares the behavioral information generated to purchase criteria stored in global purchase database 103 and associated with a particular promotion. If the behavioral information of any customer meets the purchase criteria, then the customer's CID is stored in field 309 and the corresponding promotion is stored in the field 311 of the predetermined promotion table 307. In this manner, the predetermined promotion table 307 is populated with CIDs and associated promotions to be delivered to the corresponding customers.

The host computer 101 delivers the predetermined promotion table 307 to the retail stores 105. If desired, predetermined promotion table 307 is broken up into separate predetermined promotion tables for each retail store 105. If desired, only the CIDs of customers that frequent the corresponding retail store 105 are provided to each retail store 105 in order to reduce the effect of storage and transmission constraints. The predetermined promotion table 307 is received by the purchase data computer 107 and the retail store 105 and stored in the local purchase database 109.

When a customer makes a purchase in the retail store 105 and interfaces the hand held device 201 with the purchase data computer via the POS 115, the customer CID table is transmitted through the data transfer unit 123 to the purchase data computer 107 which determines the CID as discussed above. Alternatively, the customer's CID can be input at POS 115 by other known means such as manual input, optical code recognition (OPC), or swiping a magnetic card containing the CID. Once the CID is determined, the purchase data computer 107 uses the CID to determine whether the same CID exists in field 309 of the

predetermined promotion table 307. If the CID is found in field 309, then the corresponding predetermined promotion(s) in field 311 are delivered to the data transfer unit 123 at the point of sale 115. The predetermined promotions are then transmitted over communication coupling 125 to interface 217 of hand held device 201. The predetermined promotions are transferred through bus 203 into memory unit 207 of hand held device 201 where the promotions may be reviewed and organized as in step 403 in Figure 4. In this manner, the promotions targeted to the customer whose CID was input at POS 115 are delivered to the customer at the point of sale 115.

In another embodiment, Figure 6's step 603 of determining promotions to be delivered to the customer's hand held device 201 is accomplished according to trigger purchases in a current transaction at the point of sale 115. In this embodiment, the purchase data computer 107 receives purchase triggers and promotions, which are stored in the local purchase database 109. The purchase triggers and promotions may be downloaded from the host computer 101, input by hand, or transferred by any other suitable means to the purchase data computer 107 (e.g., by floppy disk or via a connection to another computer). The purchase triggers and promotions are stored in the purchase trigger table 313 in fields 315 and 317 respectively. The purchase triggers correspond to information of a current purchase at the point of sale 115. For example, the purchase triggers may be bar code information or UPC information associated with corresponding promotions 317. Thus, each purchase trigger may identify one or more products.

As discussed, the purchase data computer 107 monitors information of a current purchase transmitted from the terminal 119 to the store controller 111. The information of the current purchase may be generated upon scanning a bar code on a product or by any other suitable method for transmitting information from a terminal at a point of sale to a store controller. The purchase data computer 107 compares the information of the current purchase with the purchase trigger stored in the field 315. If there is a match between any of the purchase triggers in the field 315 and the information of the current purchase monitored by the purchase data computer 107 (e.g., if a product identified by the purchase trigger is purchased), then the purchase data computer 107 electronically transmits the corresponding promotion in the field 317 to the hand held device 201 via data transfer unit 123, over communication coupling 125 to interface 217 of hand held device 201. The promotions are

transferred through bus 203 into memory unit 207 of hand held device 201 where the promotions may be reviewed and organized as in step 503 in Figure 5. In this manner, the promotions corresponding to trigger items of a current purchase transaction are delivered to the customer at the point of sale 115.

According to another embodiment of the present invention, the promotions are transmitted to the hand held device 201 from a manufacturer or advertiser via a wide area network. Figure 7A is a system for downloading promotions to hand held device 201 over the Internet. Various computers (e.g., the computers 701 and 703) are connected by the Internet 706 to various servers that provide product information and promotions, in this case, the manufacturer's server 708, the advertiser's server 709, and purchase data computer 107. Each server 708 and 709, and purchase data computer 107 is a computer, server, device, and/or software for delivering promotions over the Internet 706. Such promotions include discount coupons, loyalty card accounts, frequent shopper cards and/or store credits. Computers 701 and 703, and servers 708 and 709 may be implemented as a computer system such as the computer system 801 illustrated in Figure 8. Moreover, it is to be understood that the purchase data computer 107 in Figure 7A may provide promotions via the Internet 706 by working in association with one or more of the devices depicted in Figure 1. In particular, host computer 101 may be used in combination with or as a substitute for the purchase data computer 107 depicted in Figure 7A.

Figure 7B shows the process of inputting promotions to the hand held device 201 from the Internet 707. In step 721, the customer accesses the Web site or Web page containing promotions using desktop computer 701. Step 721 typically requires the customer to connect with an Internet Service Provider (ISP) using a telephonic modem, cable modem or similar hardwired device to obtain a connection to Internet 706. When connected to the Internet 706, the customer uses a Web browser running on the computer 701 to view a Web page identified by a URL associated with the manufacturer or other entity offering the promotions. The term "URL" is intended to include uniform resource names, uniform resource identifiers, and equivalents thereof. The customer may be asked to enter a customer identification code which allows manufacturers to track customers that access the URL and use such tracking information for future promotions and targeted advertisements.

The customer "browses" the Web page associated with, for example, the

manufacturer's group server 708 for promotions and selects the promotions to be downloaded in step 723. The customer then inputs a command in the desktop computer 701 causing the promotions selected in step 723 to be downloaded from the server 708 via the Internet 707 to the customer's desktop computer 701 as in step 725. The promotions are then electronically transmitted to the hand held device 201 where they are received and stored to begin the process depicted in Figure 5. According to one embodiment, promotions selected from various servers such as servers 708 and 709, and purchase data computer 107 may be stored in the desktop computer 701, and subsequently downloaded to the hand held device 201. Moreover, the customer may download the promotions in bulk and review and organize them on the hand held device 201 as discussed above with respect to Figure 5.

In another embodiment, the customer downloads the promotions directly to the hand held device 201 without the use of a desktop computer as shown in Figure 7C. The hand held device 201 used in this embodiment is equipped with a device for accessing the Internet 706 by wireless means. In this embodiment, interface 217 of hand held device 201 further provides a two way wireless data communication link 711 with Internet 706. Communication link 711 is typically provided by a wireless connection to an ISP. Hand held device 701 preferably includes a Web browser or other software for communicating through an Internet protocol (IP) network. Running this software on the hand held device 201, the customer accesses the Web site and views the Web page associated with the manufacturer's group server 708 in step 731. For example, the manufacturer's Web page is browsed as with the desktop computer 701 discussed above and promotions are selected for electronically transmitting to the hand held device 201 in step 733. However, in step 735 promotions are then electronically transmitted from the manufacturer's server 708 by way of the wireless communications link 711 directly to the hand held device 20 where they are received and stored to begin the process depicted in Figure 5. As with the desktop computer 701 discussed with respect to Figure 7B, promotions may be electronically transmitted directly to the hand held device 201 from any one of a variety of servers and/or computers in bulk or selectively.

The promotions according to the present invention may be accompanied by additional information relating to the manufacturer of the retail item associated with the promotion. For example, the promotions electronically transmitted from the POS 115 or Internet 706 as discussed above may be accompanied by contact information such as a Web site, Web page,

uniform resource locator (URL) and/or e-mail address, for example, that a customer may use to contact the manufacturer of the product associated with the promotion or other entity such as a consumer advocate group, to receive information and/or other promotions. This embodiment may be implemented by storing the additional information in an additional associated subfield of the fields 311 and 317, for example. Alternatively, the additional information may be delivered to hand held device 201 from the POS 115 based on the customer's purchase history or a trigger purchase in a similar manner as the promotions described above. Moreover, with regard to transmitting promotions from POS 115 to the hand held device 115, the additional information received by the customer may also be an electronic receipt for the customers current purchase transaction. Preferably the electronic receipt may be downloaded to the customer's money management software, for example Quicken, on a desktop computer such as 801 described in Figure 8.

Portions of the invention may be conveniently implemented using conventional general purpose computers or microprocessors programmed according to the teachings of the present invention, as will be apparent to those skilled in the computer art. Appropriate software can be readily prepared by programmers of ordinary skill based on the teachings of the present disclosure, as will be apparent to those skilled in the software art.

Figure 8 illustrates a computer system 801 upon which an embodiment according to the present invention may be implemented. Computer system 801 includes a bus 803 or other communication mechanism for communicating information, and a processor 805 coupled with bus 803 for processing the information. Computer system 801 also includes a main memory 807, such as a random access memory (RAM) or other dynamic storage device (e.g., dynamic RAM (DRAM), static RAM (SRAM), synchronous DRAM (SDRAM), flash RAM), coupled to bus 803 for storing information and instructions to be executed by processor 805. In addition, main memory 807 may be used for storing temporary variables or other intermediate information during execution of instructions to be executed by processor 805. Computer system 801 further includes a read only memory (ROM) 809 or other static storage device (e.g., programmable ROM (PROM), erasable PROM (EPROM), and electrically erasable PROM (EEPROM)) coupled to bus 803 for storing static information and instructions for processor 805. A storage device 811, such as a magnetic disk or optical disc, is provided and coupled to bus 803 for storing information and instructions.

The computer system 801 may also include special purpose logic devices (e.g., application specific integrated circuits (ASICs)) or configurable logic devices (e.g., generic array of logic (GAL) or reprogrammable field programmable gate arrays (FPGAs)). Other removable media devices (e.g., a compact disc, a tape, and a removable magneto-optical media) or fixed, high density media drives, may be added to the computer system 801 using an appropriate device bus (e.g., a small computer system interface (SCSI) bus, an enhanced integrated device electronics (IDE) bus, or an ultra-direct memory access (DMA) bus). The computer system 801 may additionally include a compact disc reader, a compact disc reader-writer unit, or a compact disc juke box, each of which may be connected to the same device bus or another device bus.

Computer system 801 may be coupled via bus 803 to a display 813, such as a cathode ray tube (CRT), for displaying information to a computer user. The display 813 may be controlled by a display or graphics card. The computer system includes input devices, such as a keyboard 815 and a cursor control 817, for communicating information and command selections to processor 805. The cursor control 817, for example, is a mouse, a trackball, or cursor direction keys for communicating direction information and command selections to processor 805 and for controlling cursor movement on the display 813. In addition, a printer may provide printed listings of the data structures shown in Figures 3A, 3B, and 3C, or any other data stored and/or generated by the computer system 801.

The computer system 801 performs a portion or all of the processing steps of the invention in response to processor 805 executing one or more sequences of one or more instructions contained in a memory, such as the main memory 807. Such instructions may be read into the main memory 807 from another computer-readable medium, such as storage device 811. One or more processors in a multi-processing arrangement may also be employed to execute the sequences of instructions contained in main memory 807. In alternative embodiments, hard-wired circuitry may be used in place of or in combination with software instructions. Thus, embodiments are not limited to any specific combination of hardware circuitry and software.

As stated above, the system 801 includes at least one computer readable medium or memory programmed according to the teachings of the invention and for containing data structures, tables, records, or other data described herein. Stored on any one or on a

combination of computer readable media, the present invention includes software for controlling the computer system 801, for driving a device or devices for implementing the invention, and for enabling the computer system 801 to interact with a human user, e.g., a customer. Such software may include, but is not limited to, device drivers, operating systems, development tools, and applications software. Such computer readable media further includes the computer program product of the present invention for performing all or a portion (if processing is distributed) of the processing performed in implementing the invention.

The computer code devices of the present invention may be any interpreted or executable code mechanism, including but not limited to scripts, interpreters, dynamic link libraries, Java classes, and complete executable programs. Moreover, parts of the processing of the present invention may be distributed for better performance, reliability, and/or cost.

The term "computer readable medium" as used herein refers to any medium that participates in providing instructions to processor 805 for execution. A computer readable medium may take many forms, including but not limited to, non-volatile media, volatile media, and transmission media. Non-volatile media includes, for example, optical, magnetic disks, and magneto-optical disks, such as storage device 811. Volatile media includes dynamic memory, such as main memory 807. Transmission media includes coaxial cables, copper wire and fiber optics, including the wires that comprise bus 803. Transmission media also may also take the form of acoustic or light waves, such as those generated during radio wave and infrared data communications.

Common forms of computer readable media include, for example, hard disks, floppy disks, tape, magneto-optical disks, PROMs (EPROM, EEPROM, Flash EPROM), DRAM, SRAM, SDRAM, or any other magnetic medium, compact disks (e.g., CD-ROM), or any other optical medium, punch cards, paper tape, or other physical medium with patterns of holes, a carrier wave (described below), or any other medium from which a computer can read.

Various forms of computer readable media may be involved in carrying out one or more sequences of one or more instructions to processor 805 for execution. For example, the instructions may initially be carried on a magnetic disk of a remote computer. The remote computer can load the instructions for implementing all or a portion of the present invention

remotely into a dynamic memory and send the instructions over a telephone line using a modem. A modem local to computer system 801 may receive the data on the telephone line and use an infrared transmitter to convert the data to an infrared signal. An infrared detector coupled to bus 803 can receive the data carried in the infrared signal and place the data on bus 803. Bus 803 carries the data to main memory 807, from which processor 805 retrieves and executes the instructions. The instructions received by main memory 807 may optionally be stored on storage device 811 either before or after execution by processor 805.

Computer system 801 also includes a communication interface 819 coupled to bus 803. Communication interface 819 provides a two-way data communication coupling to a network link 821 that is connected to a local network (e.g., LAN 823). For example, communication interface 819 may be a network interface card to attach to any packet switched local area network (LAN). As another example, communication interface 819 may be an asymmetrical digital subscriber line (ADSL) card, an integrated services digital network (ISDN) card or a modem to provide a data communication connection to a corresponding type of telephone line. Wireless links may also be implemented. In any such implementation, communication interface 819 sends and receives electrical, electromagnetic or optical signals that carry digital data streams representing various types of information.

Network link 821 typically provides data communication through one or more networks to other data devices. For example, network link 821 may provide a connection through LAN 823 to a host computer 825 or to data equipment operated by a service provider, which provides data communication services through an IP (Internet Protocol) network 827 (e.g., the Internet 607). LAN 823 and IP network 827 both use electrical, electromagnetic or optical signals that carry digital data streams. The signals through the various networks and the signals on network link 821 and through communication interface 819, which carry the digital data to and from computer system 801, are exemplary forms of carrier waves transporting the information. Computer system 801 can transmit notifications and receive data, including program code, through the network(s), network link 821 and communication interface 819.

Obviously, numerous modifications and variations of the present invention are possible in light of the above teachings. It is therefore to be understood that within the scope of the appended claims, the invention may be practiced otherwise than as specifically

described herein.

CLAIMS:

1. A method comprising the steps of:
receiving promotions to an electronic hand held device;
storing said promotions in said electronic hand held device; and
electronically transmitting said promotions from said hand held device to a first point of sale (POS) at the time of a customer transaction in a retail store.
2. The method of Claim 1, wherein said step of receiving promotions comprises electronically receiving said promotions from a second POS to said hand held device during a previous customer transaction.
3. The method of Claim 2, wherein said first and second POS are the same POS.
4. The method of Claim 2, further comprising:
delivering a customer identifier to said second POS at the time of said previous customer transaction,
wherein said promotions received from said second POS are based on said customer identifier.
5. The method of Claim 2, wherein said promotions received from said second POS are based on trigger items purchased during said previous customer transaction.
6. The method of Claim 1, wherein said step of receiving promotions comprises receiving said promotions from a wide area network to said hand held device.
7. The method of Claim 6, wherein said step of receiving said promotions from a wide area network to said hand held device comprises receiving said promotions from the Internet to said hand held device.
8. The method of Claim 7, wherein said step of receiving said promotions from the Internet to said hand held device comprises:
downloading said promotions from the Internet to a desktop computer hardwired to the Internet; and
electronically receiving said promotions from said desktop computer to said hand held device.
9. The method of Claim 7, wherein said step of receiving said promotions from the Internet to said hand held device comprises electronically receiving said promotions directly to said hand held device via a wireless communications link from the Internet to said

hand held device.

10. The method of Claim 1, further comprising the step of:
receiving in said hand held device additional information relating to customer products.

11. The method of Claim 10, wherein said additional information comprises one of a URL and e-mail address associated with an entity for providing further information relating to said customer products.

12. The method of Claim 1, wherein said promotion comprises an advertisement relating to said customer products.

13. The method of Claim 12, wherein said advertisement comprises audio and video data, said video data being displayed on a display unit on said hand-held device.

14. The method of Claim 10, wherein said additional information comprises a purchase receipt associated with a purchase transaction,
wherein said purchase receipt may be downloaded from said hand held device to said computer system including money management software used by said customer.

15. The method of Claim 1, further comprising:
receiving in said electronic hand held device a customer identifier associated with said retail store;
storing said customer identifier in said electronic hand held device; and
electronically transmitting said customer identifier from said hand held device to a point of sale (POS) at the time of said customer transaction.

16. The method of Claim 1, further comprising:
receiving in said hand held device a plurality of retail store identifiers including a retail store identifier associated with said retail store, each retail store identifier having a corresponding customer identifier associated with a customer;
storing said plurality of retail store identifiers and corresponding customer identifiers in said hand held device; and
electronically transmitting said plurality of retail store identifiers and associated customer identifiers from said hand held device to said POS at the time of said customer transaction;

wherein said promotions received to said hand held device are based on the said

customer identifier associated with said customer.

17. The method of Claim 1, wherein said step of electronically transmitting said promotions from said hand held device to said POS at the time of a customer transaction comprises electronically transmitting the promotions from said hand held device to said POS via one of a hard wired medium and a wireless medium.

18 The method of Claim 1, wherein said step of receiving promotions comprises electronically receiving the promotions via one of a hard wired medium and a wireless medium.

19. A computer readable medium containing program instructions for execution on a hand held device, which when executed by the hand held device, cause the hand held device to perform the steps in the method recited in any one of Claims 1-18.

20. A hand held device comprising:

a memory device having embodied therein, data related to management of promotions; and

a processor in communication with said memory device, said processor configured to: receive promotions;

store said promotions in said memory device; and

electronically transmit said promotions from said hand held device to a first point of sale (POS) at the time of a customer transaction in a retail store.

21. The hand held device of Claim 20, wherein said processor is configured to receive promotions by electronically receiving said promotions from a second POS to said hand held device during a previous customer transaction.

22. The hand held device of Claim 21, wherein said first and second POS are the same POS.

23. The hand held device of Claim 21, wherein said processor is further configured to deliver a customer identifier to said second POS at the time of said previous customer transaction,

wherein said promotions received from said second POS are based on said customer identifier.

24. The hand held device of Claim 21, wherein said promotions received from said second POS are based on trigger items purchased during said previous customer transaction.

25. The hand held device of Claim 20, wherein said processor is configured to receive said promotions from a wide area network.

26. The hand held device of Claim 25, wherein said processor is configured to receive said promotions from the Internet.

27. The hand held device of Claim 26, wherein said promotions are downloaded from the Internet to a desktop computer hardwired to the Internet; and

said processor is configured to electronically receive said promotions from said desktop computer.

28. The hand held device of Claim 26, wherein said processor is configured to electronically receive said promotions directly to said hand held device via a wireless communications link from the Internet.

29. The hand held device of Claim 20, wherein said processor is further configured to receive additional information relating to customer products.

30. The hand held device of Claim 29, wherein said additional information comprises one of a URL and an e-mail address associated with an entity for providing further information relating to said customer products.

31. The hand held device of Claim 20, wherein said promotion comprises an advertisement which comprises audio and video data relating to said customer products, and wherein said processor is configured to;

display said video data on a display unit on said hand held device, and
play said audio on said hand held device.

32. The hand held device of Claim 29, wherein said additional information comprises a purchase receipt associated with a purchase transaction,

wherein said processor is configured to download said purchase receipt from said hand held device to a computer system including money management software used by said customer.

33. The hand held device of Claim 20, wherein said processor is further configured to:

receive a customer identifier associated with said retail store;
store said customer identifier in said memory device; and
electronically transmit said customer identifier from said hand held device to a point

of sale (POS) at the time of said customer transaction.

34. The hand held device of Claim 20, wherein said processor is further configured to:

receive a plurality of retail store identifiers including a retail store identifier associated with said retail store, each retail store identifier having a corresponding customer identifier associated with a customer;

store said plurality of retail store identifiers and corresponding customer identifiers in said memory device; and

electronically transmit said plurality of retail store identifiers and associated customer identifiers from said hand held device to said POS at the time of said customer transaction,

wherein said promotions received to said hand held device are based on the said customer identifier associated with said customer.

35. The hand held device of Claim 20, wherein said processor is configured to electronically transmit the promotions from said hand held device to said POS via one of a hard wired medium and a wireless medium.

36. The hand held device of Claim 20, wherein said processor is configured to electronically receive said promotions via one of a hard wired medium and a wireless medium.

37. An electronic hand held device comprising:
means for receiving promotions to said hand held device;
means for storing said promotions in said electronic hand held device; and
means for electronically transmitting said promotions from said hand held device to a first point of sale (POS) at the time of a customer transaction in a retail store.

38. The hand held device of Claim 37, wherein
said promotions are received from a second POS during a previous customer transaction,

said hand held device further comprises means for delivering a customer identifier to said second POS at the time of said previous customer transaction, and

said promotions received from said second POS are based on said customer identifier.

39. The hand held device of Claim 37, wherein said means for receiving said promotions to said hand held device comprises:

downloading said promotions from the Internet to a desktop computer hardwired to the Internet; and

electronically receiving said promotions from said desktop computer to said hand held device.

40. The hand held device of Claim 37, further comprising means for receiving in said hand held device additional information relating to customer products.

41. The hand held device of Claim 37, further comprising:

means for receiving in said electronic hand held device a customer identifier associated with said retail store;

means for storing said customer identifier in said electronic hand held device; and

means for electronically transmitting said customer identifier from said hand held device to a point of sale (POS) at the time of said customer transaction.

42. The hand held device of Claim 37, further comprising:

means for receiving in said hand held device a plurality of retail store identifiers including a retail store identifier associated with said retail store, each retail store identifier having a corresponding customer identifier associated with a customer;

means for storing said plurality of retail store identifiers and corresponding customer identifiers in said hand held device; and

means for electronically transmitting said plurality of retail store identifiers and associated customer identifiers from said hand held device to said POS at the time of said customer transaction;

wherein said promotions received to said hand held device are based on the said customer identifier associated with said customer.

43. A method comprising:

initializing a computer associated with a retail store;

determining promotions to be offered to a customer;

electronically transmitting said determined promotions from said computer to a hand held device at the time of a customer transaction.

44. The method of Claim 43, wherein said step of initializing comprises notifying said computer when said hand held device is interfaced with said computer.

45. The method of Claim 44, wherein said step of notifying comprises one of:
automatically notifying said computer when a signal connection is made between said hand held device and a device associated with said computer, and
manually notifying said computer when said signal connection is made.
46. The method of Claim 43, wherein said step of determining promotions comprises:
receiving a customer identifier associated with said customer to said computer; and
electronically transmitting predetermined promotions associated with said customer identifier from said computer to said hand held device.
47. The method of Claim 43, further comprising:
electronically receiving from said hand held device to said computer a plurality of retail store identifiers including a retail store identifier associated with said retail store, each retail store identifier having a corresponding customer identifier associated with said customer; and
determining in said computer a particular customer identifier associated with said retail store that the computer is located in,
wherein said promotions electronically transmitted from said computer to said hand held device are based on the particular customer identifier determined.
48. The method of Claim 43, wherein said step of determining promotions comprises:
monitoring purchase items purchased by said customer during said customer transaction;
detecting trigger items among said purchase items monitored; and
electronically transmitting promotions from said computer to said hand held device based on said detected trigger items.
49. The method of Claim 43 wherein said step of electronically transmitting said detected promotions from said computer to said hand held device comprises electronically transmitting the promotions from said computer to said hand held device via one of a hard wired medium and a wireless medium.
50. The method of Claim 43, further comprising the step of
electronically transmitting additional information relating to a product for which said promotion is provided.

51. The method of Claim 50, wherein said step of electronically transmitting additional information comprises electronically transmitting one of a URL and e-mail address associated with an entity for providing further information relating to said product.

52. The method of Claim 43 wherein said step of electronically transmitting a determined promotion comprises electronically transmitting an advertisement to said hand held device, said advertisement comprising at least one of audio, text, and moving video data.

53. The method of Claim 43, further comprising the step of:
electronically transmitting from said computer to said hand held device, a purchase receipt,

wherein said purchase receipt may be downloaded from said hand held device to a computer system including money management software used by said customer.

54. A computer readable medium containing program instructions for execution on a hand held device, which when executed by the hand held device, cause the hand held device to perform the steps in the method recited in any one of Claims 43-53.

55. A system associated with a retail store, comprising:
a memory device having embodied therein, data related to promotions; and
a processor in communication with said memory device, said processor configured to:
initialize said system;
determine promotions to be offered to a customer;
electronically transmit said determined promotions from said system to a hand held device at the time of a customer transaction.

56. The system of Claim 55, wherein said processor is configured to initialize said system by notifying said system when said hand held device is interfaced with said system.

57. The system of Claim 56, wherein said processor is configured to notify said system by one of:
automatically notifying said system when a signal connection is made between said hand held device and a device associated with said system, and
manually notifying said system when said signal connection is made.

58. The system of Claim 55, wherein said processor determines promotions by:
receiving a customer identifier associated with said customer; and

electronically transmitting predetermined promotions associated with said customer identifier to said hand held device.

59. The system of Claim 55, wherein said processor is further configured to:
electronically receive a plurality of retail store identifiers including a retail store identifier associated with said retail store, each retail store identifier having a corresponding customer identifier associated with said customer; and

determine a particular customer identifier associated with said retail store that the system is associated with,

wherein said promotions electronically transmitted from said system to said hand held device are based on the particular customer identifier determined.

60. The system of Claim 55, wherein said processor is configured to determine promotions by:

monitoring purchase items purchased by said customer during said customer transaction;

detecting trigger items among said purchase items monitored; and

electronically transmitting promotions from said system to said hand held device based on said detected trigger items.

61. The system of Claim 55 wherein said processor electronically transmits said detected promotions from said system to said hand held device by electronically transmitting the promotions from said system to said hand held device via one of a hard wired medium and a wireless medium.

62. The system of Claim 55, wherein said processor is further configured to electronically transmit additional information relating to a product for which said promotion is provided.

63. The system of Claim 62, wherein said processor is configured to electronically transmit additional information by electronically transmitting one of a URL and e-mail address associated with an entity for providing further information relating to said product.

64. The system of Claim 55, wherein said processor is configured to electronically transmit a promotion by electronically transmitting an advertisement to said hand held device.

65. The system of Claim 64 wherein said processor is configured to electronically

transmit an advertisement to said hand held device by transmitting data comprising at least one of audio, text, and moving video.

66. The system of Claim 62, wherein said processor is further configured to:
electronically transmit to said hand held device, a purchase receipt,
wherein said purchase receipt may be downloaded from said hand held device to a computer system including money management software used by said customer.

67. A system associated with a retail store comprising:
means for initializing said system;
means for determining promotions to be offered to a customer;
means for electronically transmitting said determined promotions from said system to a hand held device at the time of a customer transaction.

68. The system of Claim 67, wherein said means for initializing comprises one of:
means for automatically notifying said computer when a signal connection is made between said hand held device and a device associated with said computer, and
means for manually notifying said computer when said signal connection is made.

69. The system of Claim 67, wherein said means for determining promotions comprises:

means for receiving a customer identifier associated with said customer to said computer; and

means for electronically transmitting predetermined promotions associated with said customer identifier from said computer to said hand held device.

70. The system of Claim 67, further comprising:

means for electronically receiving from said hand held device to said computer a plurality of retail store identifiers including a retail store identifier associated with said retail store, each retail store identifier having a corresponding customer identifier associated with said customer; and

means for determining in said computer a particular customer identifier associated with said retail store that the computer is located in,

wherein said promotions electronically transmitted from said computer to said hand held device are based on the particular customer identifier determined.

71. The system of Claim 67, wherein said means for determining promotions comprises:

means for monitoring purchase items purchased by said customer during said customer transaction;

means for detecting trigger items among said purchase items monitored; and

means for electronically transmitting promotions from said computer to said hand held device based on said detected trigger items.

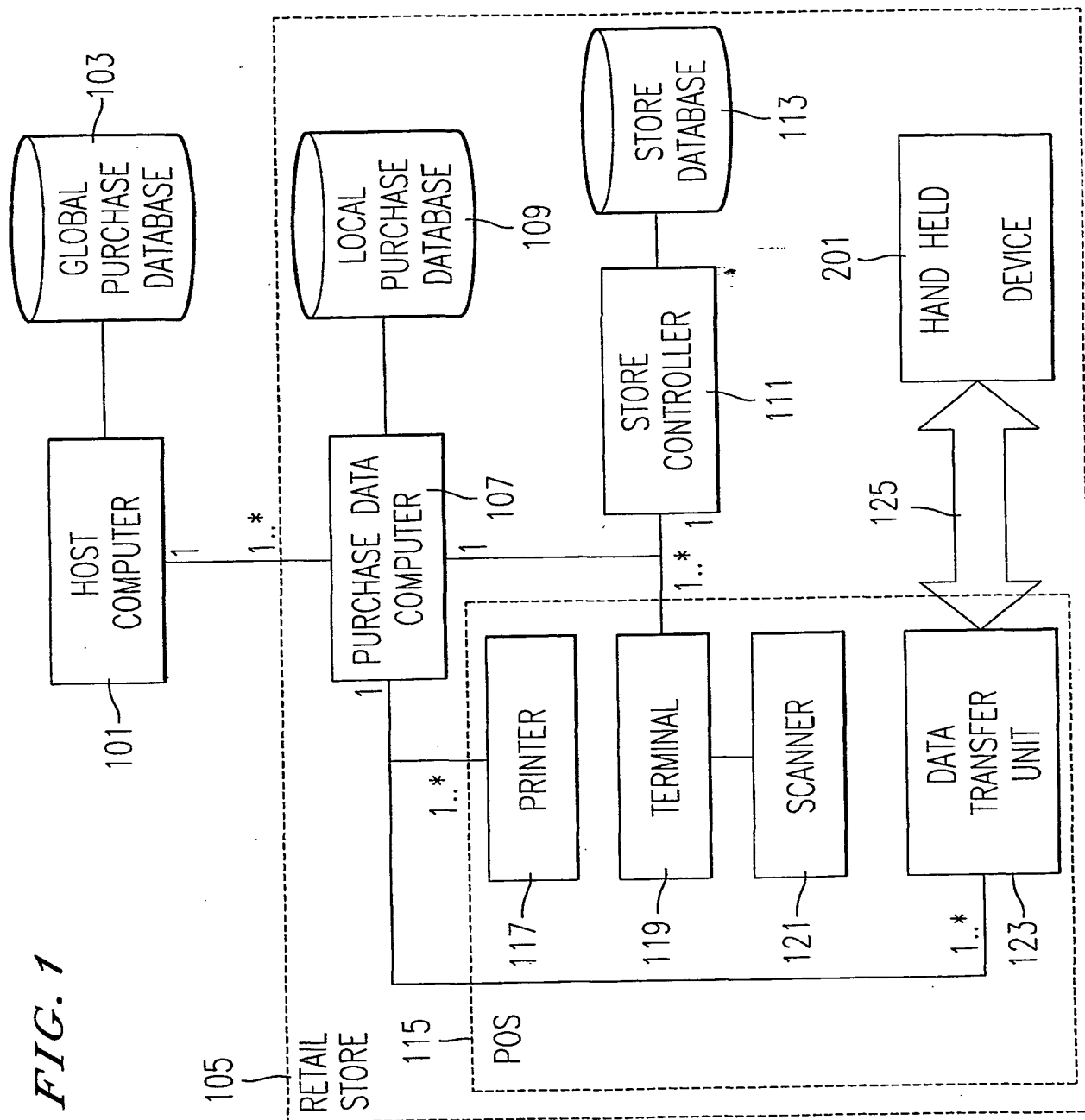
72. The system of Claim 71, further comprising means for electronically transmitting additional information which one of a URL and e-mail address associated with an entity for providing further information relating to said product.

73. The system of Claim 67, further comprising:

electronically transmitting from said computer to said hand held device, a purchase receipt,

wherein said purchase receipt may be downloaded from said hand held device to a computer system including money management software used by said customer.

FIG. 1



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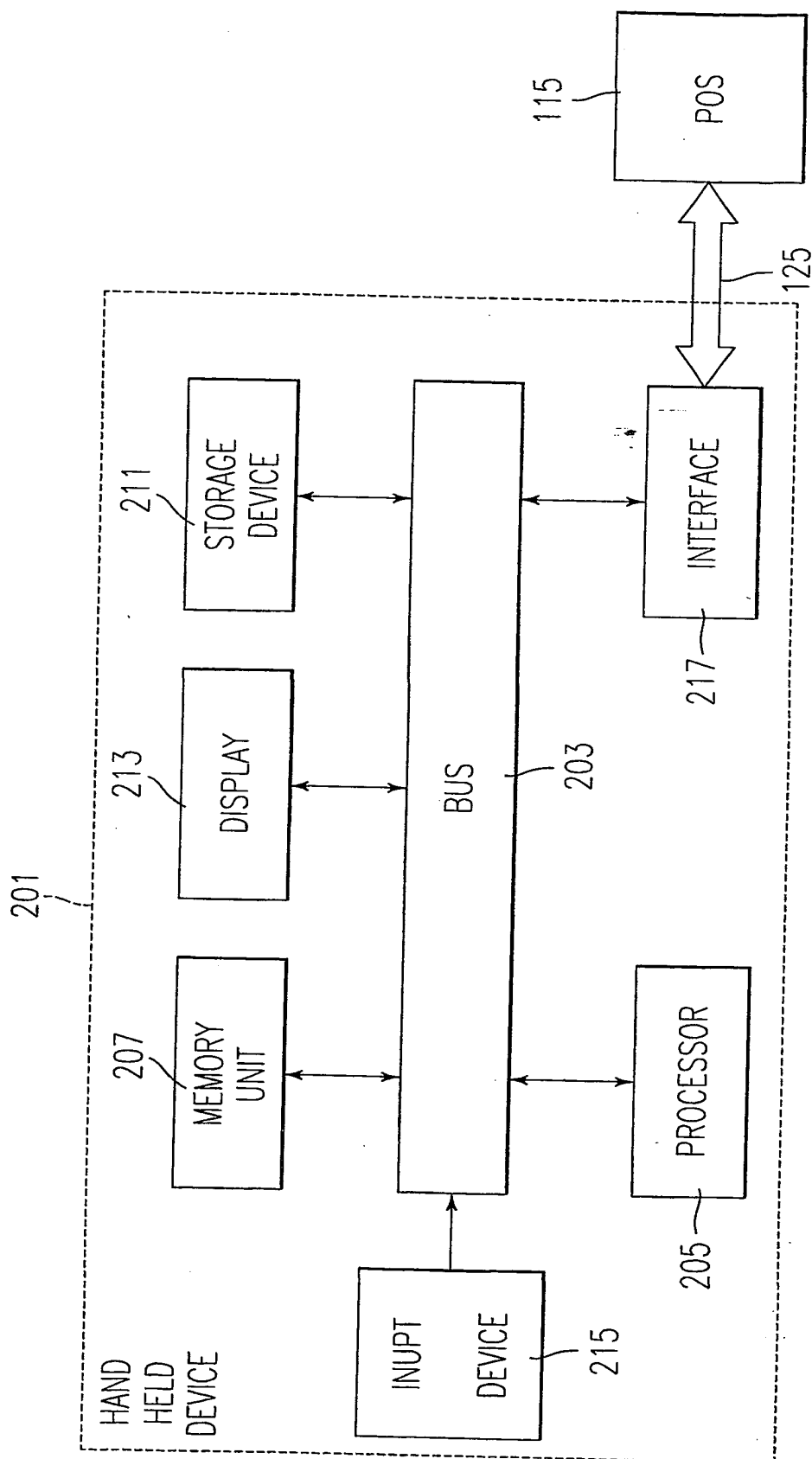


FIG. 2

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303 CID	305 RETAIL STORE
301 12345 8765 x23y86	ABC GROCERY XYZ MARKET dd8342

FIG. 3A

309 CID	311 PREDETERMINED PROMOTION	323 CONDITION
307 8765 MMM765	ONE GALLON OF MILK FOR 5 CENTS 50 CENTS OFF BRAND X CEREAL	SPEND \$25 THIS WEEK

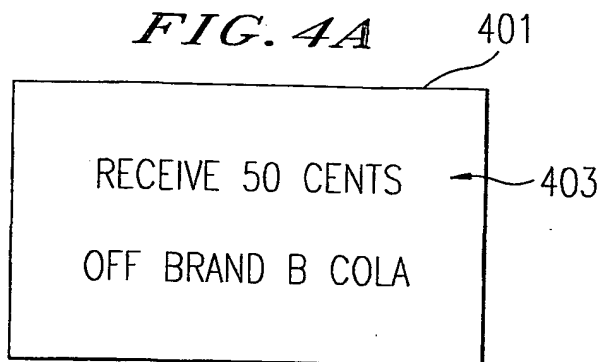
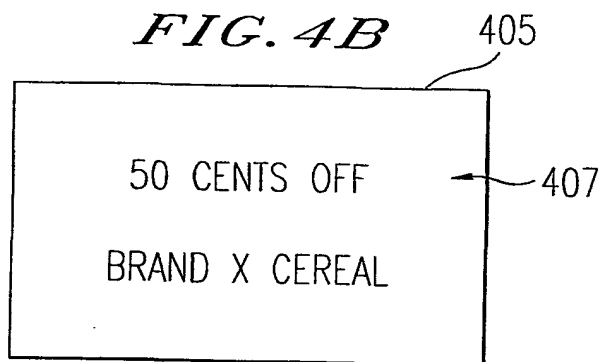
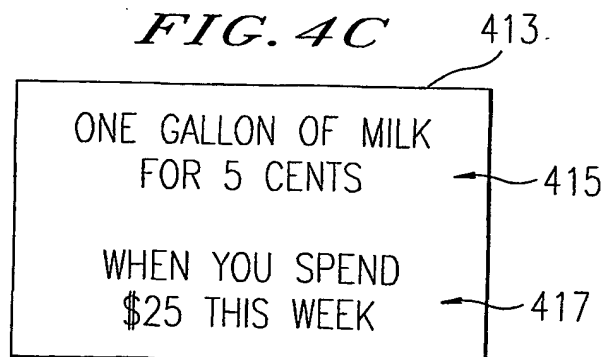
FIG. 3B

316 TRIGGER ITEM	317 PROMOTION	325 CONDITION
313 BRAND A COLA BRAND T TEA	50 CENTS OFF BRAND B COLA 50 CENTS OFF 5LB BAG OF SUGAR	

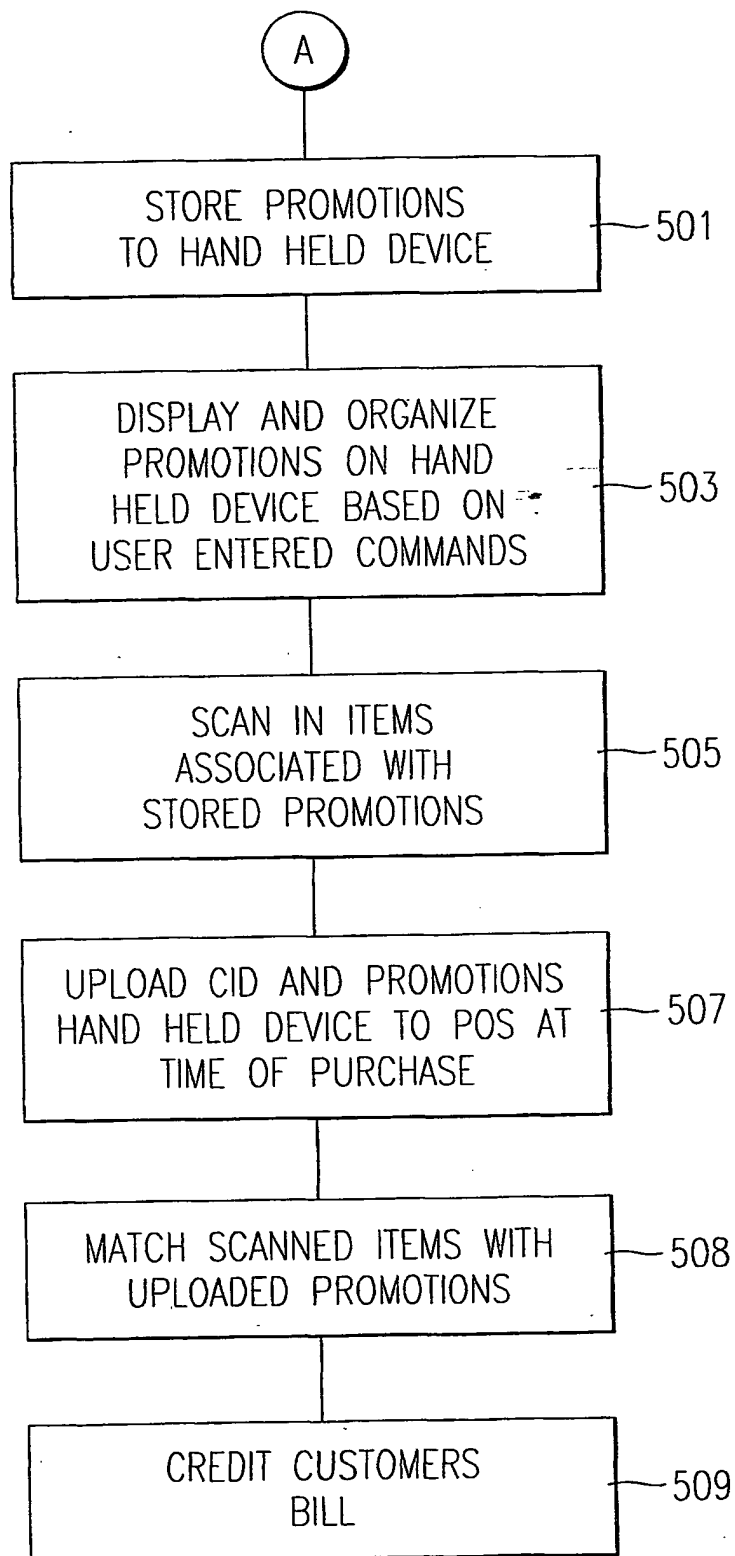
FIG. 3C

INTERNATIONAL SEARCH REPORT

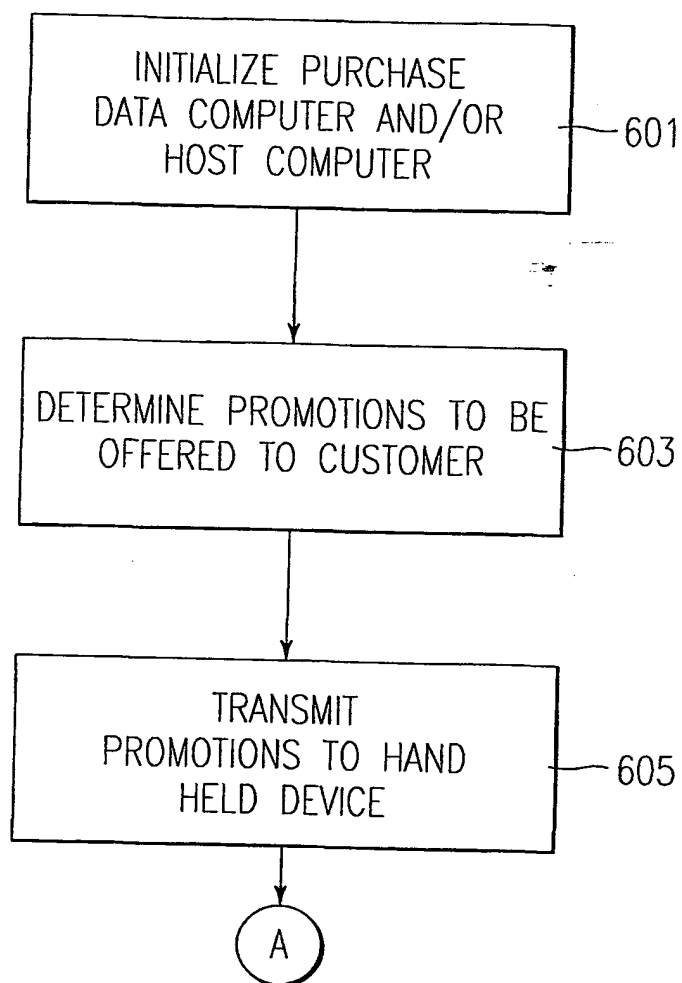
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FIG. 4A*FIG. 4B**FIG. 4C*

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*FIG. 5*

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*FIG. 6*

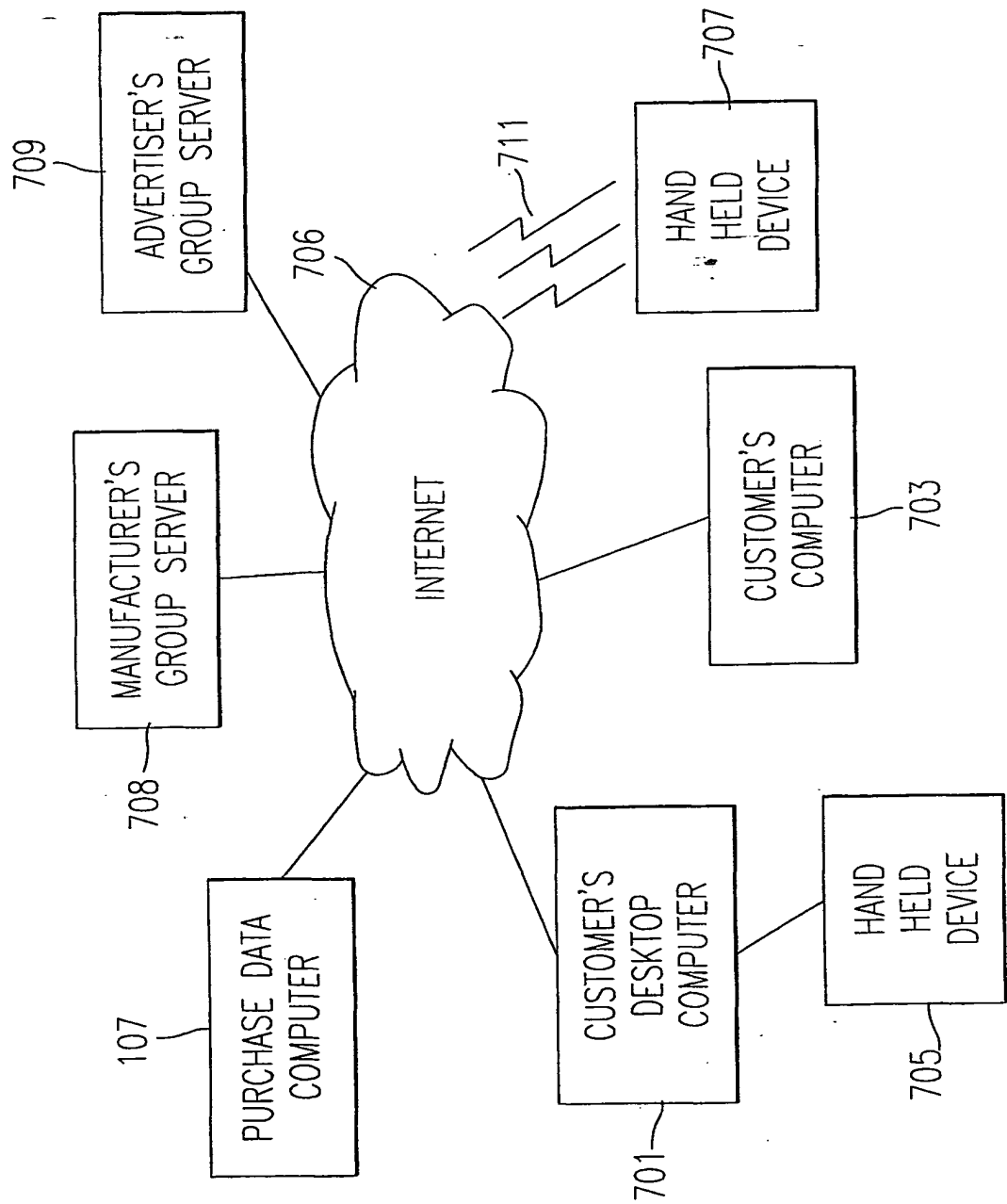
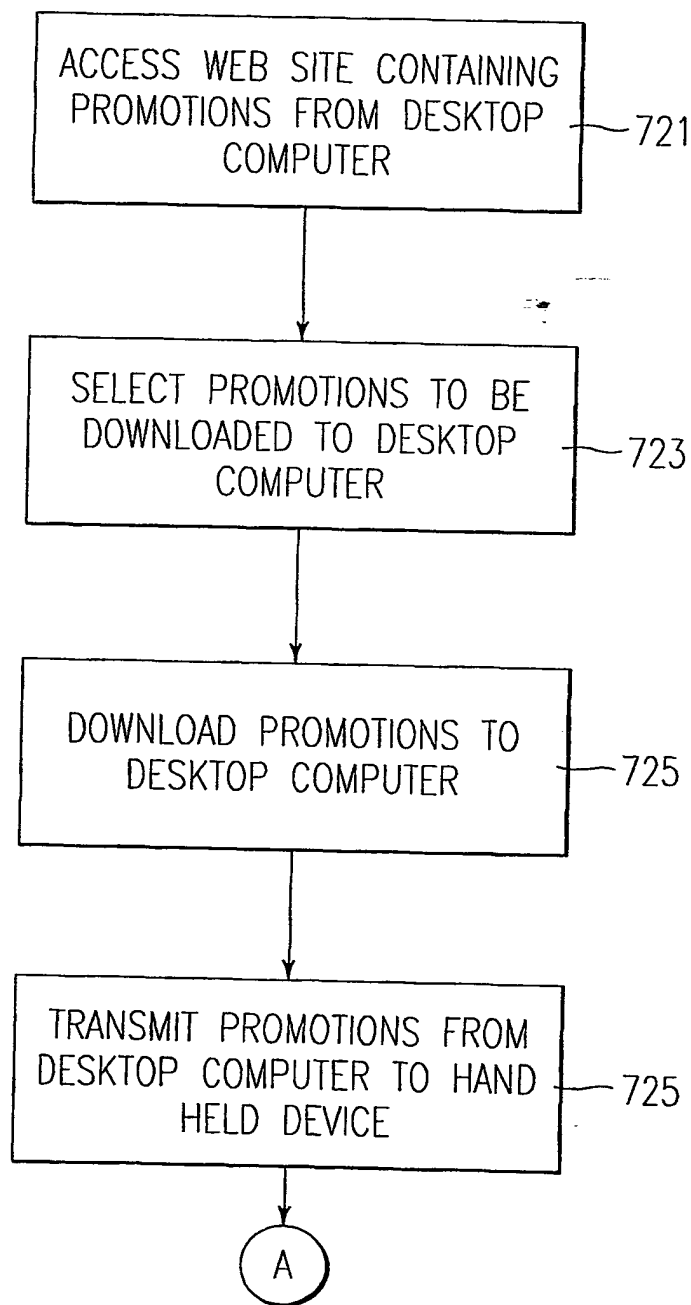
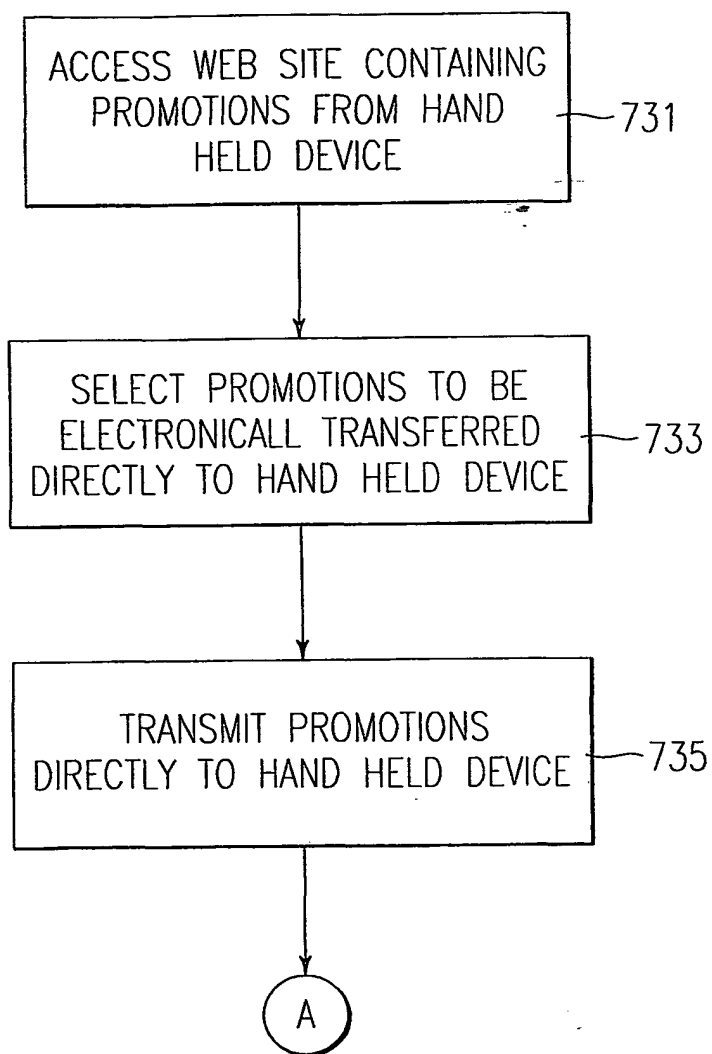


FIG. 7A

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*FIG. 7B*

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*FIG. 7C*

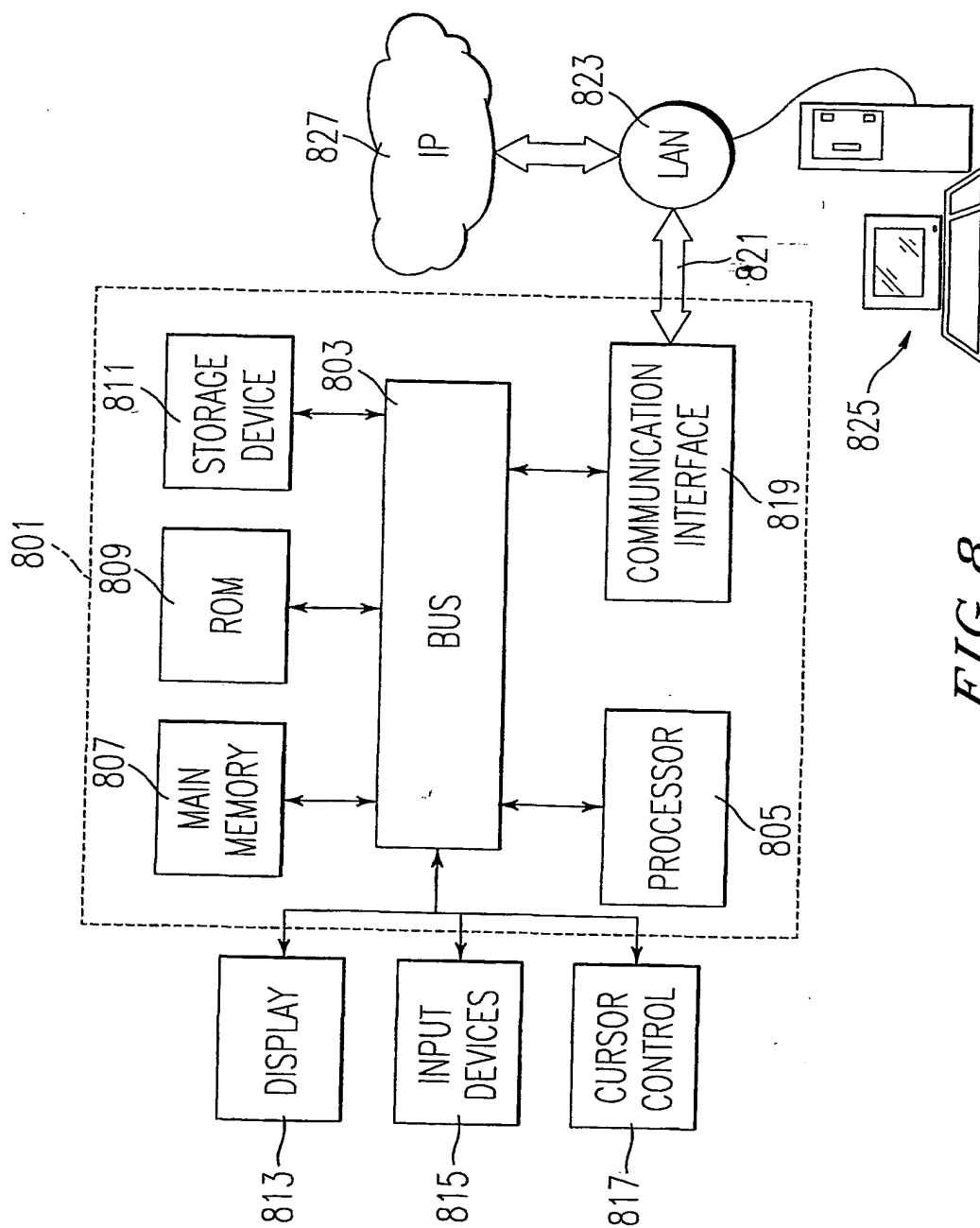


FIG. 8

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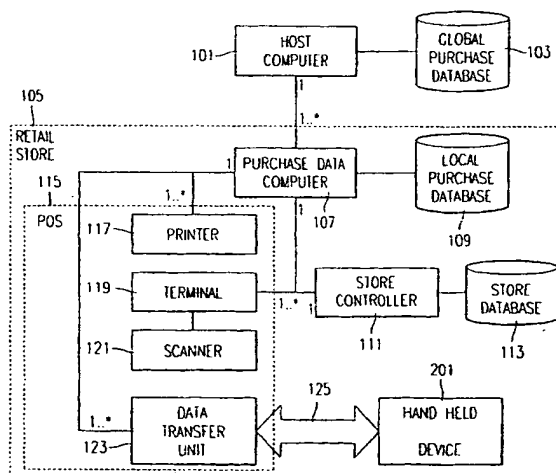
(43) International Publication Date
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09/613,904 11 July 2000 (11.07.2000) US
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(57) Abstract: A method, system and computer product for management of promotions using a hand held device. The method includes receiving promotions to a hand held device, storing the promotions to the electronic hand held device, and electronically transmitting the promotions from the hand held device to a point of sale (POS) at the time of a customer transaction. The promotions may be stored to the hand held device from an electronic transmission from a computer associated with the retail store at the time of purchase, or from downloading the promotions from the Internet. Additionally, the promotions may be electronically transmitted from the computer associated with the retail store to the hand held device based on one of a plurality of customer identifiers (CIDs) stored in the hand held device.

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A. CLASSIFICATION OF SUBJECT MATTER

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According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G06F G07G G07F G09F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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X	US 5 905 246 A (FAJKOWSKI PETER W) 18 May 1999 (1999-05-18)	1-14, 17-22, 24-32, 35-40, 42-73
Y	column 3, line 51 -column 11, line 15; figures 5,13 column 15, line 11 -column 28, line 2	4,15,16, 23,33, 34,38,41
Y	US 5 855 007 A (JOVICIC NEBOISA ET AL) 29 December 1998 (1998-12-29) abstract; figure 3 column 3, line 25 -column 6, line 65 -/--	4,15,16, 23,33, 34,38,41

☒ Further documents are listed in the continuation of box C.

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C (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

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